



Town of Amherst

Department of Public Works

2003 Water Quality Report

Dear Customer:

In the year 2003, drinking water supplied by the Town of Amherst (PWS ID#1008000) met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. This annual report will detail where your water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. This is the sixth year this report has been disseminated. We are proud to announce that in 2003 the Amherst Water Department has been recognized by the Massachusetts Department of Environmental Protection (MADEP) for outstanding performance and achievement, and has met all water quality standards for the past six years. Although much of the information in this report is required, we will try to supplement it with information of interest to the public.

1. Water Sources

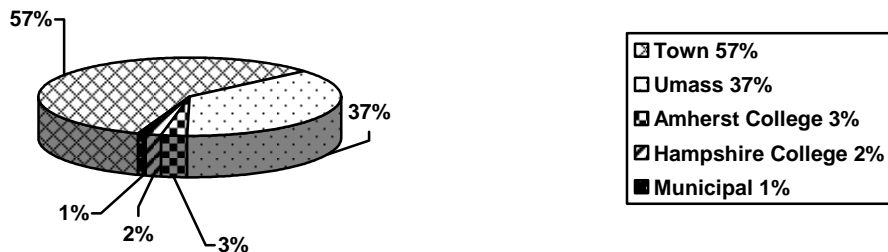
The Town currently has seven sources that contribute to meeting the water demand: Atkins Reservoir, the Pelham Reservoir System, the South Amherst Wells (#1 & #2), The Brown Well (#3), the Lawrence Swamp Well (#4) and the Bay Road Well (#5). Both surface water supplies, Atkins and Pelham, and Wells 1, 2 & 3 are used year round on a daily basis to satisfy the required demands. These five sources supply approximately 90% of the total water produced. Wells #4 and #5 operate during high demand periods and summer months when the reservoirs are low. These two wells produce a combined 10% of the water supply.

In 2002, a Source Water Assessment (SWAP) was completed on the Amherst Water system by the MADEP. This SWAP report assesses the susceptibility of the Town's drinking water sources to contaminants and outlines recommendations for drinking water protection. A copy is available at the Department of Public Works for review.

2. Water Consumption Data

The average daily water consumption for the year 2003 was 3.638 million gallons, with a peak demand of 4.726 million gallons on July 9, 2003.

Water Consumption FY03



3. Substances Found in Tap Water

In order to ensure that tap water is safe to drink, the MADEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 800-426-4791, or online at www.gov.safewater.com. Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial Contaminants- such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants- such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.

Pesticides and Herbicides- may come from many sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants- including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants- which can be naturally occurring or be the result of oil and gas production and mining activities.

4. Vulnerability

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and some infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

5. Water Quality

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

All water sources are analyzed for the following chemical substances: inorganics (metals and salts), nitrate, nitrite, lead, copper, disinfection byproducts, volatile organic substances (petroleum and solvents) and synthetic organic compounds

(herbicides and pesticides). All of these substances that were detected were below the federal limits. The table below indicates contaminants that were detected in your drinking water. None of these substances were above the levels designated by the Safe Drinking Water Act as being a health risk. The following definitions will help explain the water quality table:

Important Drinking Water Definitions:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants (e.g. chlorine, chloramines, chlorine dioxide).

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

I. Regulated Substances	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range of Data	Major Sources	Violation
a) Inorganic Substances								
Fluoride	9/03/03	ppm	4	N/A	1.78	ND - 1.78	Added to prevent tooth decay	NO
Barium	7/30/03	ppm	2	2	0.013	ND - .013	Erosion of natural deposits	NO
Nitrate (measured as nitrogen)	7/16/03	ppm	10	10	2.59	ND - 2.59	Runoff from fertilizer use; Leaching from septic tanks, Sewage; Erosion of natural deposits	NO
b) Volatile Organic Substances								
Total Trihalomethanes	7/09/03	ppb	80	80	51.9	10.5 - 51.9	Byproduct from chlorination	NO
II. Unregulated Substances	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range of Data	Major Sources	Violation
Sodium	7/30/03	ppm	None	None	11.5	9.77 - 11.5	Road salt; Chlorine; Lye	NO
Sulfate	7/17/03	ppm	None	None	6.5	5.6 - 6.5	Natural deposits; Landfills; Dumps;	NO
Nickel	7/30/03	ppm	None	None	0.001	ND - 0.001	Natural deposits; Sewage	NO
Substance	MCLG		Highest Level		90% Value*		Action Level	
Lead	0 ppb		6 ppb		4 ppb		15 ppb	
Copper	1.3 ppm		0.12 ppm		.042 ppm		1.3 ppm	

*The 90% Value is the value below which 90% of the data falls. If the 90% value is below the AL, no further action is necessary

Units Description: ND: Not detected ppm: parts per million, or milligrams per liter (mg/l) ppb: parts per billion, or micrograms per liter (µg/l)

6. Lead & Copper

Elevated levels of lead and copper in drinking water usually indicate water that has corrosive qualities and may attack the household plumbing. Most homes use copper piping, and the solder used to hold the fixtures together might contain lead (lead in solder was discontinued in 1989). All water supplies in Amherst are treated for corrosion control by the addition of sodium hydroxide to reduce corrosion. In the last required sampling done in 2002, water samples from thirty-nine homes were analyzed, and the results are summarized in the table above. Only 1 sample was found to have lead levels over the action level (AL).

7. Treatment Plant Efficiency

All raw water from surface water supplies is treated by coagulation of the insoluble contaminants and then filtered through a fine sand-like material. The effectiveness of this process is measured by the cloudiness of the water (turbidity) leaving the treatment plant. Turbidity occurs naturally as a result of soil runoff due to turbulence in the tributaries that supply the reservoir. The following turbidity data illustrates the daily average performance of the two water treatment plants that serve Amherst.

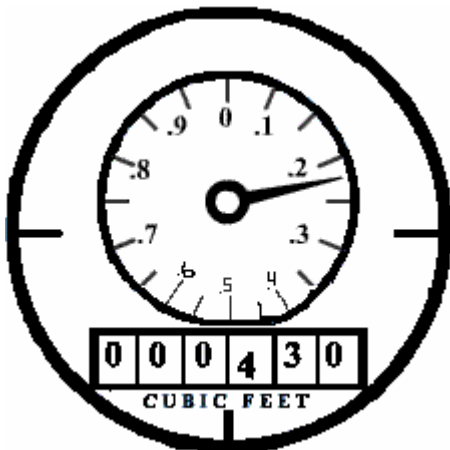
Treatment Plant	Raw Water Turbidity		Treated Water Turbidity	
	Annual Average	Maximum Reading	Annual Average	Maximum Reading
Centennial	0.52	1.11	0.10	0.15
Atkins	0.37	0.46	0.10	0.21

Note: All units measured in NTU= Nephelometric Turbidity Units

* 95 % of samples must be under MCL of 0.3 NTU

8. Understanding Your Water Meter

Most residences in Amherst have a water meter which is usually located on the basement floor along the wall closest to the street. It has a brass colored body with a plastic top with numbers on it arranged like the odometer on a car, and a clock face with a single needle that is divided in tenths. Most of the meters have a small wire connected to the top which leads to a small black box that is mounted on the outside of the house. This allows our meter reader to obtain the reading without entering the house.



Each time the needle makes a complete circle you have consumed one cubic foot of water (7.5 gallons) and the six digit odometer increases by one unit.

For simplicity in billing we only read the first four digits from the left or each 100 cubic feet (750 gallons) of water that you use. Meters are read four times annually and your bill is calculated by multiplying the usage by the current water/sewer rate.

Average consumption for a single family house is around 25-30 usage for three months (each unit of usage is 750 gallons or 100 cubic feet of water). If your readings are above that range you might want to check for leaks. Most problematic leaks occur in toilets. A good way to check for leaks is to put some dye tablets in your toilet (available at DPW and the Central Services window at Town Hall) or read the water meter before you go to bed and then again in the morning before any water is used in the home.

9. Simple Water Saving Tips

In the House

1. Never use your toilet as a wastebasket.

Save 3-7 gallons per flush

2. Run dishwashers and washing machines only when full.

Save up to 15 gallons per load

3. Take shorter showers, 5-10 minutes will get you clean.

Saves 3-7 gallons per minute

4. Turn off the tap while brushing your teeth or shaving.

Save 4-10 gallons per day



In the Yard

1. When cleaning your driveway, sweep it instead of using a hose.
2. If you keep your grass at least two inches high, it will shade the roots and hold moisture.
3. Water your garden in the early morning or evening, not in the heat of the midday sun when up to 30% of the water is lost to evaporation.

For more information, call Robert Pariseau, Director of Water Resources, Amherst DPW at (413) 256-4050 (ext. 13)

Email: pariseau@town.amherst.ma.us

This report is also available on the web at

WWW.TOWN.AMHERST.MA.US

AVOIDING CROSS-CONNECTIONS IN THE HOME



A cross-connection is a permanent or temporary piping arrangement which can allow drinking water to become contaminated. Most cross-connections in the home involve a garden hose. When there is an unusual situation that creates a high demand on the water distribution system like a water main break or a fire, backflow can occur. This is when water flows in the opposite direction from its normal flow. You should never create cross-connections between the water system and hazardous chemical or biological substances because of the potential for backflow. Do not leave a hose submerged in any solution that is potentially hazardous. For example:

- Do not use the garden hose sprayer to apply insecticides or fertilizers to your lawn
- Do not use the garden hose to clear a blockage in the sewer system
- Do not leave the hose in the bucket while you are washing your car or flushing the radiator
- Do not submerge the hose in the pool while filling it



Town of Amherst
Department of Public Works
586 South Pleasant Street
Amherst, MA 01002-2542

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

នេះជាសេចក្តីរាយការណ៍សំខាន់អំពីទឹក
ទទួលបាននៅទីក្រុងរបស់លោកអ្នក
បើមិនយល់សូមមេត្តារកអ្នកបកប្រែ
អ្នកដែលយល់អំពីសេចក្តីរាយការណ៍
ពន្យល់ដល់លោកអ្នក។

Town of Amherst 2003
Drinking Water Quality Report